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## FOR A METHODIC STUDY OF LIFE-HISTORIES OF MAMMALS

BY ERNEST THOMPSON SETON

For long I have believed in and used a prepared schedule for methodic study of life-histories. It has been my lot many times to find a man who did not know how much he knew about a given animal until he was subjected to the dragnet of a schedule process, and the results were surprising and satisfactory, to himself as well as to the questioner.

How much we have lost for lack of this, it would be easy to show. I happen to have before me Audubon and Bachman's account of the northern graysquirrel. The subjects treated in the various sections of its 12 pages are in the following order:

Name	Food
Description	Numbers
Characters	Enemies
Synonyms	Migrations
Description	Numbers
Color	Food
Varieties	Distribution
Measurements	Comparative description
Habits	Various names
Nesting	Description
Pairing	Young
Young	Description
Habits in captivity	Measurements
Rutting season	Distribution
Combats	Color
Food hoards	Description

That is to say there is no attempt at arrangement—no orderly approach; the chapter is merely a mass of undigested observations and raw material; and he has omitted a score of important matters that he certainly knew about. Bachman did justice neither to the graysquirrel, nor to himself. He certainly had ten times the facts about the creature, that one might suppose from his article; and the reason he did not set them down, was I think, because he had no plan of orderly approach. We find this defect in most available life-histories. It seems to me it would be remedied, if each naturalist set out with a plan, such as the one I give herewith, and please understand that this is a mere suggestion. For over twenty years I have used it myself but am ready to drop it as soon as a better one is offered.

## PLAN FOR MAKING OBSERVATIONS

*Identification (Name)*

Names, scientific, English, aboriginal.

Description, generic, specific, subspecific, comparative and anatomical.

Literary history.

*Environment (Place)*

Range of the species with outlying records, and known changes of same.

Environment or habitat of the species.

Relation to other species of animals or plants.

Home-range of the individual, extent, etc.

Migrations.

Erratic movements.

*Physical facts (Body)*

Numbers or population, primitive and present.

Senses or special equipment.

Cycles of increase, etc.

Abnormalities, freak developments.

Coat, moults, etc.

Glands.

Protective and directive marks and tricks.

Speed, usual and fast.

Swimming.

Tracks in various gaits.

Scatology, evidence of.

Sanitation in general and in nest.

Bathing.

Sand baths.

Sun baths.

Medication.

Food, full details, commensalism, parasitism, etc.

Storage habits.

*Habits (Mind)*

Diurnal or nocturnal.

Mating ceremonies.

Marriage, form, duration, etc.

Home-building, kind and number of homes.

Do they make nests or bowers never used for their young?

Gestation.

Young, number, development, family life, relation of father to young.

Do old males become hermits?

Sociability.

Gregarious or not.

Disposition or temper.

Amusements or games.

Aesthetic instincts, love of beautiful, etc.

Curiosity.

Communication, etc.

Modes of signalling.  
Voice, various calls and their meaning.  
Song, love songs.  
Property-instinct.  
Hibernation and torpidity.  
Habits in captivity.  
Morality, vice, crime, suicide, etc.

*Enemies, etc.*

Diseases and natural mode of treating, etc.  
Parasites, internal and external.  
Insect pests, and mode of combating.  
Rivals.  
Enemies of other kinds and modes of defeating.  
Age attained, breeding age, etc.  
Death of most, due to what?

*Strange Instances*

Odd partnerships with birds or other creatures.  
Unexplained instances.  
Abnormalities.

*Economics*

Service or relation to man.

In all cases give name, place and date. The omission of these have rendered useless a great number of records.

While the above seems a logical sequence, it will frequently prove better to rearrange it for special animals or materials, but each species should be considered under each head, and under other heads suggested by circumstances.